

DOCUMENT RESUME

ED 136 775

IR 004 562

AUTHOR St. Aubin, Raymond
 TITLE Evaluation of C.A.I. as Used by Various Handicaps.
 PUB DATE 75
 NOTE 12p.
 EDRS PRICE MF-\$0.83 HC-\$1.67 Plus Postage.
 DESCRIPTORS Achievement Gains; *Computer Assisted Instruction;
 *Exceptional Child Services; Graphs; *Handicapped
 Students; Learning Experience; Participant
 Satisfaction; *Program Evaluation
 IDENTIFIERS Computer Curriculum Corporation; South Met Assn Low
 Incidence Handicapped IL

ABSTRACT

This paper summarizes a project undertaken by South Metropolitan Association for Low-Incidence Handicapped (SMA) in 1975 to provide handicapped children in the south suburban area of metropolitan Chicago with learning opportunities via computer assisted instruction. Students exhibiting hearing, visual mental, or other learning disabilities were enrolled in math, reading, or language arts programs prepared by Computer Curriculum Corporation. Anecdotal and objective performance data of 198 students were collected for project evaluation. Subjective descriptions offered by participating teachers illustrate students' responses to and interactions with the computer, and their own positive feedback. Graphically presented performance data indicate growth by handicapping condition and total average in each area. It is suggested that student progress is correlated with the amount of on-line exposure to the program. (SC)

 * Documents acquired by ERIC include many informal unpublished *
 * materials not available from other sources. ERIC makes every effort *
 * to obtain the best copy available. Nevertheless, items of marginal *
 * reproducibility are often encountered and this affects the quality *
 * of the microfiche and hardcopy reproductions ERIC makes available *
 * via the ERIC Document Reproduction Service (EDRS). EDRS is not *
 * responsible for the quality of the original document. Reproductions *
 * supplied by EDRS are the best that can be made from the original. *

ED136775

U.S. DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
NATIONAL INSTITUTE OF
EDUCATION

THIS DOCUMENT HAS BEEN REPRO-
DUCED EXACTLY AS RECEIVED FROM
THE PERSON OR ORGANIZATION ORIGIN-
ATING IT. POINTS OF VIEW OR OPINIONS
STATED DO NOT NECESSARILY REPRESENT
OFFICIAL NATIONAL INSTITUTE OF
EDUCATION POSITION OR POLICY.

Evaluation of C.A.I. as Used by Various Handicaps

by

Raymond St. Aubin

"PERMISSION TO REPRODUCE THIS COPY-
RIGHTED MATERIAL HAS BEEN GRANTED BY

Raymond St. Aubin

TO ERIC AND ORGANIZATIONS OPERATING
UNDER AGREEMENTS WITH THE NATIONAL IN-
STITUTE OF EDUCATION. FURTHER REPR-
DUCTION OUTSIDE THE ERIC SYSTEM RE-
QUIRES PERMISSION OF THE COPYRIGHT
OWNER."

IR004062

EVALUATION OF C.A.I. AS USED
BY VARIOUS HANDICAPS

by Raymond St. Aubin, Assistant Director
South Metropolitan Association for Low-Incidence
Handicapped

PROGRAM DESCRIPTION

South Metropolitan Association for Low-Incidence Handicapped (S.M.A.) is one of thirteen regional service agencies in the State of Illinois, for children who require special diagnostic, supportive and classroom services beyond the regular school district program.

Specifically, S.M.A. serves children with hearing impairment, vision impairment, orthopedic and health related problems, and multiple handicaps. These children would reside in one of 55 school districts that lie within the south suburban area of metropolitan Chicago. The classroom program is of the day-class variety, with children being bussed to a classroom or classroom clusters and returning in the late afternoons to their homes. These students range in age from three through twenty-one. Total enrollment for the 1975-76 school year is 335 children.

DEPLOYMENT DESCRIPTION

In December of 1974, under a Federal Grant of Title I, 89-313, South Metropolitan Association entered into a contractual agreement with Computer Curriculum Corporation of Palo Alto, California, to provide C.A.I. to children within the S.M.A. region. A total of twenty-five terminals were distributed in such a way that children exhibiting various disabilities would have an opportunity to interact with the computer. The primary emphasis was to allow handicapped students an exposure to C.A.I. Secondly, the terminals were also available to non-handicapped students within the same building when they were not used by the handicapped population. Data on 198 students was collected from January, 1975 until the end of May, 1975, a period of five months. Of this number, 148 students exhibited disabilities under the following classifications or categories: hard-of-hearing 32; deaf 20; partially sighted 2; multiply handicapped hearing impaired 13; orthopedically handicapped 14; severe learning disability/emotionally disturbed 23; social/emotional maladjusted 31; educable mentally handicapped (MMI) 13.

EVALUATION OF C.A.I. AND THE HANDICAPPED STUDENT

An evaluation process was carried out during the five months of operation. This evaluation is presented in two parts - one, an anecdotal, subjective description of what happened; - two, an objective evaluation based on computer records of measured growth.

ANECDOTAL EVALUATION

Teacher response to C.A.I. can only be described as excited and positive - this despite a lengthy delay in turning up the program due to a large telephone installation job (twenty of the twenty-five terminals were remote) and a rather significant computer breakdown in mid-February, at which time some student histories were lost. Service problems at specific sites and "noise" of terminals also were definite problems individual teachers had to face. Yet teacher response to the system remained highly positive, probably best worded in the sentence "Yes, we had problems and irritations, but....."

Thirteen proctors were involved in keeping the system operating at the thirteen different sites. Twelve were teachers; one a principal. The proctoring duties were added to their responsibilities as teachers and principal. These people were asked to complete a questionnaire in May of 1975 as to their experience as a proctor, the person most heavily involved in C.A.I. and the person burdened with all the additional duties of enrolling students, changing paper and ribbons, calling for reports, monitoring of other students coming in to use the teletypewriter. Ten of the thirteen responded. Several of their responses are significant.

List the number of terminals you presently have located at your site.
How many would you need to meet your needs next year?

Seven indicated they needed additional terminals. Three indicated that what they had was sufficient but that they definitely should not be given less.

The proctors were asked to check the appropriate areas on the following chart.

	<u>Have To Have It Again Next Year</u>	<u>Would Be Nice To Have As Supplement</u>	<u>Not All That Its Cracked Up To Be</u>	<u>Indiff- erent</u>
My feeling	6	4	0	0
My students' feeling	8	2	0	0
My administration's feeling	7	3	0	0

The proctors were asked if they would like to serve as proctors again next year.

<u>Yes</u>	<u>Indifferent</u>	<u>No</u>
7	2	1

Throughout the year, in telephone conversations and classroom visits, teachers consistently reported how pleased they were with the system, the growth they saw coming to their students in the academic and self-image areas, and repeated little stories to indicate what led them to these feelings.

One student with severe behavior disorders was sent to the room where the computer was located, only because he could not be controlled during gym time. The teacher hoped she could use the computer as a motivating factor, and in two

to three weeks have him using the program. He was in program three days, no longer a behavior problem while working at the terminal and, in fact, preferred to come down and work on the computer and was willing to control himself to earn that opportunity. Another student in this same school with severe learning disability/behavior problems, sat at the terminal and did 69 problems in the space of one session. "This", the teacher reported, "is more problems than the student has done in the classroom for the past four months."

- teacher
thru school

One principal told of the elation of one EMH student who came to her office waving her computer paper with her first 100%.

Several students had to overcome difficult physical barriers to use the teletypewriter. One partially sighted student, in particular, would sit hunched over the terminal, the plastic guard thrown up, using a special low vision aid magnifier and light specifically designed so he could read the print-out.

One teacher related some concerns about using C.A.I. with children exhibiting social-emotional problems in school. One difficulty these children may have is relating to other persons. Relating to a machine could prove to be a cop-out for the student, and thus cut down on interrelations with other people. This, however, was not the case. This teacher felt that children using the computer showed an increase in relating and communicating to other people. Allowed to work individually in programs at their ability level, and experiencing success, the students felt better about themselves, and about school. The C.A.I. program was a high positive motivating factor for these students.

These illustrations are offered only as a few examples of student response to C.A.I. and explains in large part the teachers' positive response. The objective data cannot measure the interest in learning, the pleasure, and the delight the students exhibited when it was time for them to interact with the computer.

OBJECTIVE EVALUATION

The C.C.C. program is set up in such a way that the teacher enrolls a student in the reading, math or language arts program(s) at intervals of a half year. The computer makes adjustments during the first ten sessions to 'hone' in on the student's actual ability level. Significant jumps forward or backward may occur during these first sessions if the teacher has placed a child at an inappropriate level.

To measure student progress in the C.A.I. program, base lines were established in the different curriculum areas. Arbitrarily, it was decided that a base line score in mathematics would not be recorded until the student had spent at least ten sessions in math. Likewise, in the areas of reading and language arts, a base line score would be recorded after a student had spent

an hour or more in that program.

Scores were collected periodically from January through the end of May and recorded on sheets. For the purpose of brevity, composite scores are indicated in graphics 1,2,3 for each curriculum area.

A few notes are needed to help interpret the charts:

Sample of students involved in the reporting is small. This is inherent in the very fact that the number of students we educationally program for, by definition of low-incidence, is small. The 335 students we serve are from a total school-age population of almost 200,000.

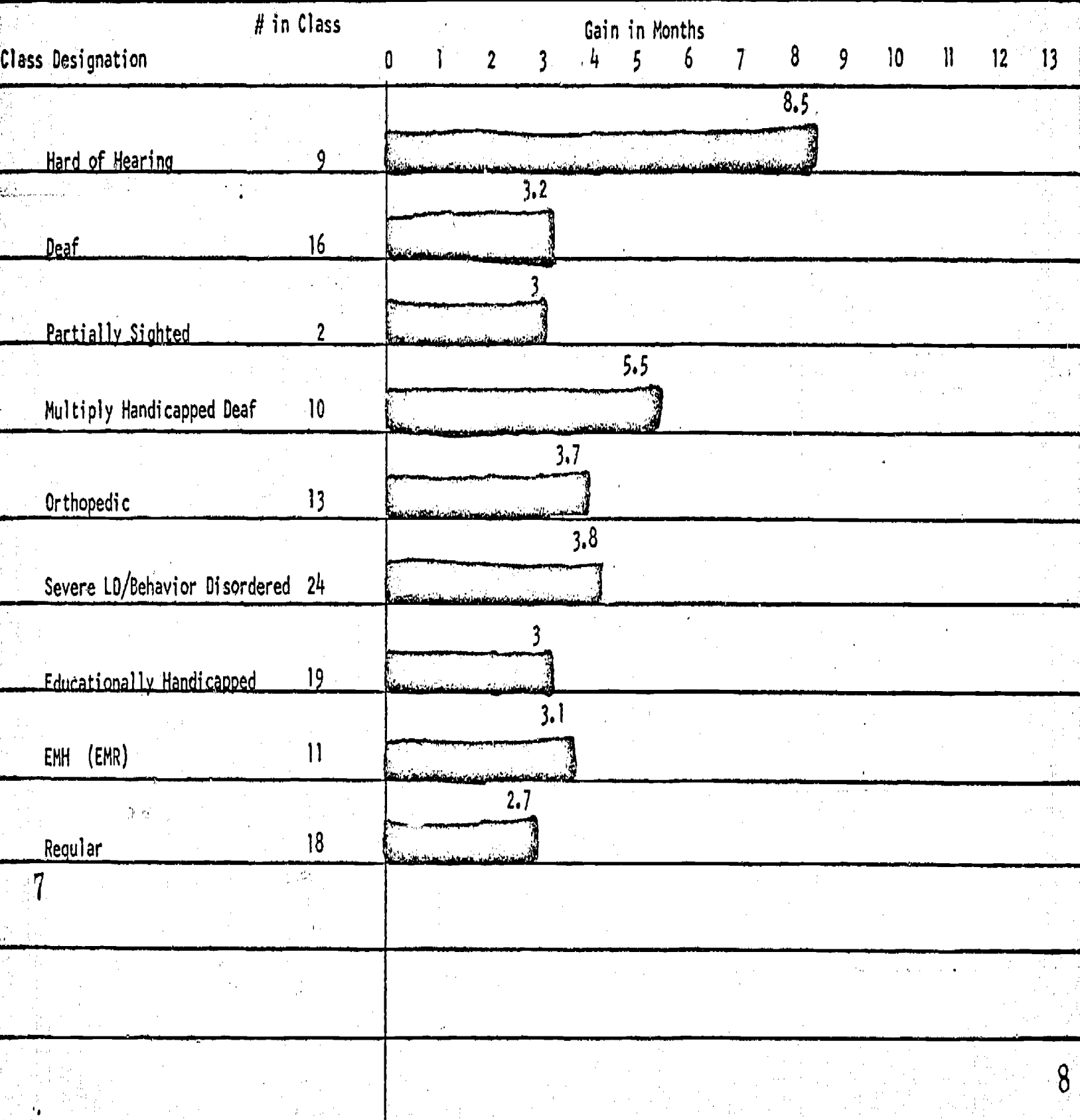
Academic growth for certain handicaps is extremely slow. For a multiply handicapped deaf child to make two-three months of measurable progress in a ten month school year would be considered by most deaf educators as a productive and worthwhile year. Academic growth using C.A.I. must be compared to academic growth of the same handicapped group in non-C.A.I. learning activities. We would not expect an educable mentally retarded student to show normal academic growth in C.A.I. when he does not have the potential to grow that rapidly in any learning activity.

There is more data available in the area of mathematics than in either reading or language arts. Reading requires an entry level reading ability of 2.5. Language arts requires a reading level of third grade. For many of our students, these necessary entry level skills prohibited them from using the language arts and reading program.

Finally, it is evident to this writer that there is a strong correlation to length of time an individual student spent on a program and growth in that program. Because of many reasons, some correctable, some not, the majority of students did not log substantial time on the computer. This is an area where the S.M.A. program needs to work during this present year of C.A.I. usage to insure students have the capability of spending a longer time in C.A.I.

The following graphs will indicate average growth by handicapping condition and total average in each curriculum area.

COURSE: Math



8

COURSE: Reading

[illegible]

Time on Computer (Class Average)	Hrs.	Mins.
10	0	10
20	0	20
30	0	30
40	0	40
50	0	50
60	1	00
70	1	10
80	1	20
90	1	30
100	1	40
110	1	50
120	2	00
130	2	10
140	2	20
150	2	30
160	2	40
170	2	50
180	3	00
190	3	10
200	3	20
210	3	30
220	3	40
230	3	50
240	4	00
250	4	10
260	4	20
270	4	30
280	4	40
290	4	50
300	5	00
310	5	10
320	5	20
330	5	30
340	5	40
350	5	50
360	6	00
370	6	10
380	6	20
390	6	30
400	6	40
410	6	50
420	7	00
430	7	10
440	7	20
450	7	30
460	7	40
470	7	50
480	8	00
490	8	10
500	8	20
510	8	30
520	8	40
530	8	50
540	9	00
550	9	10
560	9	20
570	9	30
580	9	40
590	9	50
600	10	00
610	10	10
620	10	20
630	10	30
640	10	40
650	10	50
660	11	00
670	11	10
680	11	20
690	11	30
700	11	40
710	11	50
720	12	00
730	12	10
740	12	20
750	12	30
760	12	40
770	12	50
780	13	00
790	13	10
800	13	20
810	13	30
820	13	40
830	13	50
840	14	00
850	14	10
860	14	20
870	14	30
880	14	40
890	14	50
900	15	00
910	15	10
920	15	20
930	15	30
940	15	40
950	15	50
960	16	00
970	16	10
980	16	20
990	16	30
1000	16	40

of Months in Course
4

Average Gain
1.6

COURSE: Language

